

Decayed, Missing, or Filled Permanent Teeth Index

Procedure & Method Information

<i>Name of Procedure/Method</i>	Decayed, Missing, or Filled Permanent Teeth Index	<i>Abbreviation</i>	DMFT
<i>Purpose</i>	To assess the prevalence of coronal caries (i.e., cavities).		
<i>Year of Establishment</i>	1938	<i>Type of Procedure/Method</i>	
<i>Developer(s)</i>	H.T. Klein, C.E. Palmer, and J.W. Knutson	<i>Oral Condition Category</i>	

Background Information

<i>Background Information</i>	<p>The Decayed, Missing, or Filled Permanent Teeth (DMFT) Index was originally described by H.T. Klein, C.E. Palmer, and J.W. Knutson in 1938 to determine the prevalence of coronal caries. It is applied only to whole permanent teeth and is composed of three components, the D-component for "Decayed," the M-component for "Missing," and the F-component for "Filled." Filled teeth were assumed to have been unequivocally decayed before restoration (Burt and Eklund, 1999).</p> <p>For primary dentition, its equivalent is referred to in lowercase lettering, i.e., dft, where "e" indicates "extracted tooth." For the dft index, teeth missing due to complications with exfoliation are not recorded as missing for caries because it is not known whether such teeth were carious before exfoliation (Klein, Palmer, and Knutson, 1938).</p> <p>The DMFT Index is a simple, rapid, versatile, and universally accepted and applicable measurement that has been used widely for several decades (Burt and Eklund, 1999; World Health Organization, 1999).</p>
<i>Changes Over Time</i>	None

Procedure Method

<i>Procedure Method</i>	<p>To obtain the DMFT Index, the examiner, under favorable lighting conditions and using a No. 3 plain mirror and a fine-pointed pig-tail explorer, will determine the sum of how many teeth are: "Decayed," "Missing" or extracted due to decay, and "Filled" with either a permanent or temporary restoration as a result of caries involvement.</p> <p>For the D-component, if a tooth has both a caries lesion and a filling, it is calculated as "D"</p>
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only. Note that only one call may be made for a given tooth. If two or more conditions exist on the same tooth, then caries receives precedence over a restoration. When examining a filling for recurrent caries, a defective filling is not considered carious in the absence of definitive visual and tactile criteria for caries.

The maximum number for an individual DMFT score is 28 or 32, if the wisdom teeth are included. For example, a DMFT score of $3+2+5=10$ for an individual means that 3 teeth are decayed, 2 teeth are missing, and 5 teeth have fillings. Furthermore, it also means that 18 (i.e., $28 - 10 = 18$) teeth are intact. For deciduous or primary teeth, the maximum deft score for an individual would be 20 since primary dentition has a maximum of 20 teeth.

A mean DMFT score for a group (e.g., gender, age) can also be calculated, with the sum of the individual DMFT scores divided by the number of subjects examined.

Established Modifications

Originally, according to the criteria for the World Health Organization (WHO), only teeth missing due to caries were included for its M-component. However, now, for individuals 30 years and older, the M-component should comprise teeth missing due to caries or for any other reason. As well, for subjects under 30 years of age, the M-component should only include teeth missing due to caries (World Health Organization, 1997).

Other procedural modifications can be made to the DMFT index to allow for factors such as secondary caries, crowned teeth, bridge pontics, and any other particular attribute required for study. To save time in large surveys, the DMFT can be used half-mouth, by applying to opposite diagonal quadrants, and the score doubled, an approach that assumes that caries incidence is bilateral (Burt and Eklund, 1999).

In addition, changes to the deft index include the dmft index and dft index. The dmft index is used on children before the ages of exfoliation or applied only to the primary molar teeth. The dft index is numerically the same as the deft index, except that the deft allows for two grades of caries (Burt and Eklund, 1999).

Federal Survey Modifications

For the National Health and Examination Survey (NHANES) I, 1970-74, and the National Institute of Dental Research (NIDR) National Dental Caries Prevalence Survey, 1979-80, the DMFT was not conducted per se, but the evaluation methods were very similar as noted below.

In the NHANES I, 1970-74, each tooth was classified as:

- "Sound,"
- "Decayed,"
- "Missing,"
- "Filled," and
- "Filled-Defective."

For the "Missing" component, permanent teeth were categorized as Unerupted, Carious Extraction, Accidental Loss, and Orthodontic Extraction.

In the National Institute of Dental Research (NIDR) National Dental Caries Prevalence Survey, 1979-80, each tooth was evaluated and coded based on the following criteria:

Tooth Status Call Codes

- 1 (5) - All primary (permanent) tooth surfaces are scored sound.
- 2 (6) - At least one primary (permanent) tooth surface is decayed.
- 3 (7) - At least one primary (permanent) tooth surface is filled; the other tooth surfaces are caries free.
- 4 - All tooth surfaces are scored unerupted permanent.
- 8 - All permanent tooth surfaces are scored missing due to caries.
- 9 - All permanent tooth surfaces are scored missing for other than caries or excluded.

Source: National Institutes of Health, National Institute of Dental Research. Oral Health of United States Children: The National Dental Caries Prevalence Survey, 1979-1980. Washington, DC: U.S. Government Printing Office.

For the remainder of the Federal surveys (i.e., National Institute of Dental Research (NIDR) surveys and National Health and Nutrition Examination Surveys (NHANES)), the DMFT was not conducted, but each tooth was evaluated overall when conducting the examination for the Decayed, Missing, or Filled Permanent Tooth Surfaces (DMFS) Index. For more information, please refer to Federal survey modifications under the procedural method section for the DMFS.

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Validity

Reliability

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